Formulation and Processing of Plant-Based Proteins Training Course

Professional Development Training Course Outline

Category	Food processing and Technology	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Formulation and Processing of Plant-Based Proteins Training Course is designed to provide participants with in-depth knowledge and technical skills in developing, formulating, and manufacturing high-quality plant-based protein products. This course integrates innovation, sustainable food processing, and nutrition technology, enabling learners to meet the growing consumer demand for sustainable and alternative protein sources. Through this program, participants will understand ingredient functionality, protein extraction, texture optimization, flavor enhancement, and process control strategies.

This course emphasizes hands-on learning experiences, practical formulation techniques, and modern food technology applications for product development in the plant-based protein industry. Participants will gain insights into food chemistry, protein engineering, quality assurance, and sensory evaluation methods critical for producing nutritionally balanced and appealing plant-based products. By the end of the training, participants will be equipped with market-driven innovation approaches and sustainable processing solutions to enhance competitiveness in the food and beverage sector.

Programme Curriculum

Formulation and Processing of Plant-Based Proteins Training Course

Introduction

Formulation and Processing of Plant-Based Proteins Training Course is designed to provide participants with in-depth knowledge and technical skills in developing, formulating, and manufacturing high-quality plant-based protein products. This course integrates innovation, sustainable food processing, and nutrition technology, enabling learners to meet the growing consumer demand for sustainable and alternative protein sources. Through this program, participants will understand ingredient functionality, protein extraction, texture

optimization, flavor enhancement, and process control strategies.

This course emphasizes hands-on learning experiences, practical formulation techniques, and modern food technology applications for product development in the plant-based protein industry. Participants will gain insights into food chemistry, protein engineering, quality assurance, and sensory evaluation methods critical for producing nutritionally balanced and appealing plant-based products. By the end of the training, participants will be equipped with market-driven innovation approaches and sustainable processing solutions to enhance competitiveness in the food and beverage sector.

Course Objectives:

1. Understand the science behind plant-based protein formulation and processing.
2. Identify key plant protein sources and their functional properties.
3. Apply modern food processing technologies for protein extraction and purification.
4. Develop balanced formulations for plant-based meat, dairy, and beverage alternatives.
5. Optimize texture, color, and flavor in plant-based protein products.
6. Integrate sustainable production techniques in protein processing.
7. Conduct sensory evaluation and consumer acceptability testing.
8. Implement quality control measures in protein-based food production.
9. Analyze market trends, consumer preferences, and innovation opportunities.
10. Apply food safety and regulatory standards in formulation and manufacturing.
11. Design scalable production models for commercial applications.
12. Use digital tools and automation systems in plant protein processing.
13. Evaluate product performance and shelf-life stability through analytical testing.

Organizational Benefits

1. Enhanced product development capabilities in sustainable food innovation.
2. Improved operational efficiency through optimized production processes.
3. Increased brand competitiveness in the plant-based protein market.
4. Access to cutting-edge formulation and processing techniques.
5. Strengthened research and development capacity.
6. Cost-effective ingredient utilization and process optimization.
7. Empowered workforce with up-to-date technical knowledge.
8. Improved product quality, safety, and consumer satisfaction.
9. Strategic alignment with sustainability and health-focused trends.
10. Enhanced market adaptability and innovation-driven growth.

Target Audiences

1. Food technologists and product developers
2. Nutrition and dietetics professionals
3. Research scientists and food engineers
4. Entrepreneurs in plant-based food industries
5. Quality assurance and production managers
6. Sustainable food system consultants
7. R&D specialists in food processing companies
8. Academic and institutional researchers in food innovation

Course Duration: 5 days

Course Modules

Module 1: Introduction to Plant-Based Protein Science

- Overview of plant proteins and global protein demand
- Nutritional and functional characteristics of plant proteins
- Classification of legume, cereal, and seed proteins
- Protein extraction and purification principles
- Industrial applications in food systems
- *Case Study: Soy protein isolation and commercial applications*

Module 2: Ingredient Functionality and Formulation Design

- Understanding protein functionality and structure
- Role of emulsifiers, binders, and stabilizers
- Balancing flavor and texture during formulation
- Optimizing ingredient ratios for product performance
- Addressing off-flavor challenges
- *Case Study: Pea protein-based burger formulation*

Module 3: Processing Technologies for Plant Proteins

- Extrusion technology and texturization
- Fermentation and enzymatic hydrolysis techniques
- Drying, milling, and protein concentration methods
- Moisture management and texture formation
- Industrial-scale production process control
- *Case Study: High-moisture extrusion for meat analogs*

Module 4: Sensory Evaluation and Product Quality

- Sensory testing methods for plant-based foods
- Consumer perception and flavor optimization
- Shelf-life assessment and quality retention
- Color and texture measurement techniques
- Addressing sensory gaps compared to animal proteins
- *Case Study: Sensory profiling of oat milk products*

Module 5: Food Safety and Regulatory Compliance

- Regulatory frameworks for plant-based products
- Food labeling and allergen management
- Good manufacturing practices (GMP) and HACCP
- Ingredient sourcing and traceability
- International certification standards
- *Case Study: Compliance strategies in EU plant-based markets*

Module 6: Sustainable Production and Environmental Impact

- Life cycle assessment of plant-based foods
- Water and energy-efficient processing systems
- Waste reduction and by-product utilization

- Carbon footprint measurement
- Sustainable sourcing and ethical supply chains
- *Case Study: Sustainability practices in pea protein manufacturing*

Module 7: Market Trends and Consumer Insights

- Global and regional market analysis
- Consumer behavior and lifestyle shifts
- Branding and product positioning strategies
- Innovation trends in plant-based categories
- Market entry strategies for startups
- *Case Study: Marketing success of Beyond Meat*

Module 8: Emerging Innovations in Plant Protein Processing

- Novel proteins and hybrid protein systems
- Functional ingredient development
- Application of artificial intelligence in R&D
- 3D food printing and next-gen manufacturing
- Future directions in plant protein innovation
- *Case Study: AI-driven formulation in protein beverages*

Training Methodology

- Interactive lectures and guided discussions
- Practical demonstrations and formulation exercises
- Case study analysis and problem-solving sessions
- Group assignments and collaborative projects
- Industry expert presentations and networking
- Virtual simulation and digital learning tools

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com